

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/014851

International filing date (day/month/year)
30.12.2004

Priority date (day/month/year)
30.12.2003

International Patent Classification (IPC) or both national classification and IPC
B64D11/04, B64D13/06, F25D17/02

Applicant
AIRBUS DEUTSCHLAND GMBH

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITYInternational application No.
PCT/EP2004/014851

AP20 Rec'd PCT/PTO 27 JUN 2006

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/014851

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or
industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	4-11,19,22
	No: Claims	1-3,12-18,20,21,23
Inventive step (IS)	Yes: Claims	
	No: Claims	4-11,19,22
Industrial applicability (IA)	Yes: Claims	1-23
	No: Claims	

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

AP20Rec'63CTPTO 27 JUN 2006
PCT/EP2004/014851

The following documents are referred to in this communication:

- D1 : US 2003/042361 A1 (SIMADIRIS GEORGE ET AL) 6 March 2003 (2003-03-06)
D2 : US 5 513 500 A (FISCHER H. ET AL) 7 May 1996 (1996-05-07)
D3 : US 6 131 398 A (VERSTEIJNEN) 17 October 2000 (2000-10-17)
D4 : US 5 671 607 A (CLEMENS ET AL) 30 September 1997 (1997-09-30)

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

INDEPENDENT CLAIM 1

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT. Document D1 discloses (the references in parentheses applying to this document):

- A cooling system for the cooling of heat producing devices in an aircraft (claim 1), the cooling system comprising
- a central cold producing device (figure 2, item 30)
- at least one cold consumer (figure 2, item 20)
- a cold conveyance system connecting the cold producing device and the cold consumers (figure 2, item 32)
- the cold conveyance system has at least one cooling circuit (item 32) which supplies cooled cold carrier medium from the cold producing device (item 30) to the at least one cold consumer (item 20) and brings this back to the cold producing device, and whereby the at least one cold consumer is supplied with cold produced in the cold producing device by means of the cold carrier medium circulating in the cooling circuit refrigeration machine (paragraph [0007])

DEPENDENT CLAIMS 2-23

Dependent claims 2-23 do not contain any features which, in combination with the features

of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

Claim 2 : Refrigeration machines working in parallel are known from D1 (figure 3)

Claim 3 : The skilled person designs the cooling system in accordance with the cooling demand

Claim 4 : D1 is silent as far as the heat sink for the refrigerating installation is concerned. Using the air outside of the pressurized fuselage as a heat sink is however known from D2 (column 5, line 35-42)

Claim 5 : Independent cooling systems are known in the art (D3, figure 1, item 18,19).

Claim 6 : The claimed location of these systems within the aircraft is not regarded as being the result of an inventive activity. It merely represents one of several straightforward possibilities from which the skilled person would select to solve the installation problem.

Claim 7 : Cold consumers supplied with cold carrier medium from at least two cooling circuits are known in the art (D3, figure 1)

Claim 8 : A cold carrier pump for the circulation of the cold carrier medium is known from D1 (figure 2, item 44)

Claim 9 : Two cold carrier pumps installed in a single system are known from D1 (figure 8).

Claim 10 : The provision of a storage unit is known from D1 (figure 2, item 46)

Claim 11 : The additional features of claim 11 are known from D3 (figure 1, item 21)

Claim 12 : A secondary cold carrier as claimed is known from D1 (par. [0032])

Claim 13 : A central control unit as claimed is known from D1 (figure 8, item 66)

Claim 14 : The sensors used by the control system to monitor the cooling requirement are known from D1 (paragraph [0048], [0051])

Claim 15 : The additional features of claim 15 are known from D1 (paragraph [0009])

Claim 16 : The additional features of claim 16 are known from D1 (paragraph [0040])

Claim 17 : A controllable refrigeration capacity is known from D1 (paragraph [0009])

Claim 18 : Monitoring the outflow temperature and controlling the refrigeration machine in response thereto is known from D1 (paragraph [0029])

Claim 19 : Varying the compressor speed to control the refrigeration capacity is known in the art (e.g. D4, claim 11)

Claim 20,21 : Altering the amount of refrigerating agent conveyed in the system is known from D1 (paragraph [0009])

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International application No.

PCT/EP2004/014851

Claim 22 : Redundancy considerations are common to the skilled person working in the
aircraft field

Claim 23 : An aircraft installation is known from D1 (paragraph [0005])